

# Weekly Report

2017.12.11-2017.12.17

## 1.This Week

### Summarization Form

Task	Progress	Time
Power Grid New Projects	Discuss with Xu and Huang about questions with the power flow program. Generate and organize the processed data. Design visual analytics methods about the power flow result visualization.	February
Power Grid Visualization Survey	Gathering materials.	
VIS 2018 paper	Looking for event detection methods and design new ones.	4.1

### Power Flow Project in Ningbo

- 1.Process the generated transient simulation data into organized structure. We have 6 variables in total: voltage, frequency, active and reactive power for buses and AC lines.
- 2.Discuss with Xu and Huang about questions of the power flow program.
- 3.Discuss about the visualization of power flow result data and start the visual design.

### Idea evaluation for VIS 2018 (Event Detection)

- 1.Read papers about event detection and event sequences, looking for potential event detection methods to develop a new one. The current idea is separated the entire process into two stages: 1.Detect events from the time series by using shannon entropy (SE) from information theory (turn to an optimization problem by reducing the SE to reduce the entire surprise). Events detected can be categorized into periodic events and surprised events. 2.Detect spatiotemporal relationships between events on different buses.
- 2.Feels like the idea changes into a way more like event sequence visual analysis. Is it possible to contact and cooperate with Ben Shneiderman to get any advice?

## **Visual Analysis for Large-scale power grids**

1. Check the accuracy of the using data.
2. Partition different granularities of the power grid.

## **Papers**

1. **MatrixWave: Visual Comparison of Event Sequence Data**
2. **LifeFlow: visualizing an overview of event sequences**
3. **Sequence Synopsis: Optimize Visual Summary of Temporal Event Data**
4. **EventThread: Visual Summarization and Stage Analysis of Event Sequence Data**
5. **Understanding a Sequence of Sequences: Visual Exploration of Categorical States in Lake Sediment Cores**

## **2.TODO**

1. other projects of power grid started.
2. VIS 2018 paper idea evaluation.